DOCUMENT RESUME

ED 027 648 EC 001 425

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Early Identification of the Gifted through Interage Grouping, Part II. End of Year Report.

Plainedge Public Schools, Bethpage, N.Y.
Spons Agency-New York State Education Dept., Albany.
Report No-EP-A-47-61
Pub Date Jul 63
Note-29p.
EDRS Price MF-$0.25 HC-$1.55
Descriptors-Academic Achievement, *Achievement, Age Differences, Arithmetic, *Attitudes, Child Responsibility, Creativity, Elementary School Students, *Exceptional Child Research, Friendship, *Gifted, Grade 2, *Grouping (Instructional Purposes), Language, Peer Relationship, Reading, Self Concept, Student Attitudes, Tests

Bright second grade students (mean IQ 120) who were randomly placed in either interage or traditional classes were given sentence completion tests and a uses test in an effort to assess the subjects' attitudes toward school, sense of responsibility, self concept, and creative thinking ability. The California Achievement Test was given in October and again in May. Analysis of the test results indicated that the attitudes of interage children toward school were more favorable than the attitudes of children in a straight grade class (p .05). Students in interage groups appeared more likely to initiate positive learning experiences in the absence of the teacher and were more likely to solicit student help when needed (p .01). There was no significant difference in self concept between interage subjects and the control groups, nor in creative ability as measurement by the uses test. The California Achievement Test results for interage students when in first grade showed no significant academic gain over the control students (p .01), but for second graders the interage group was significantly better only in arithmetic (p .01). Indications were for further research to explore the reason for this discrepancy. (BB)

ED027648

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END OF YEAR REPORT
JUNE 1963

EXPERIMENTAL PROGRAM NUMBER A-47-61

EARLY IDENTIFICATION OF THE GIFTED THROUGH INTERAGE GROUPING - PART II

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This study was conducted under the auspices of and with the support of the New York State Department of Education

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ACKNOWLEDGMENTS

Appreciation is acknowledged to the following for their cooperation and support in this project:

New York State Education Department of Research

Dr. Lorne H. Woollatt - Associate Commissioner for Research and Special Studies

Dr. Gerald T. Kowitz - Coordinator of Experimental Program

Dr. Henry Hausdorff - Division of Research, State Education Department

Mr. R. Foland - Division of Research, State Education Department

Dr. John S. Rinehart - Superintendent of Schools
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Mr. G. Bretton - Assistant Superintendent, Plainedge Public Schools

Mrs. Rita Duffy - Director of Elementary Education, Plainedge Public Schools

Board of Education - Plainedge Public Schools

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SECTION I

INTRODUCTION

Prior research in the Plainedge School District on the effectiveness of interage instruction has been primarily concerned with the assessment of scholastic achievement. In this regard our conclusions were, "Students in the interage condition performed at a higher level on all scales of the Metropolitan Achievement Battery. On two of these scales -- Word Discrimination and Arithmetic -- the group means were significantly different at beyond the .01 level. In addition, both interage classes performed better than both control classes on all four scales".[1]

An attempt was also made in this study to extend the analysis beyond mere reporting of scholastic gains as measured by standardized tests of achievement. Thus, on the basis of teacher evaluations, the students in both experimental conditions were divided into two sub-groups -- those students evidencing "initial adjustment problems" and those who appeared well-adjusted in their first contacts in school. The results of this analysis indicated that the interage students evidencing initial adjustment difficulties, "showed greater gains than their controls on all four scales. The differences were statistically significant on two scales -- Word Discrimination and Arithmetic. In addition, the differences approached statistical significance on the Reading Scale ".[2]

Finally, a special questionnaire was devised and administered to the parents of all the children involved in the study in the hopes of eliciting information which might reveal differences among children in their attitudes toward and reactions to their educational experiences. It was found that "the parents of children in the interage program provided significantly higher ratings on the two items dealing with (a) the

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[1] Runyon, Richard P. Early Identification of the Gifted through Interage Grouping. Experimental Program #A-47-61, N. Y. State. July 1962, p. 23.

[2] Ibid., p. 23

richness and variety of classroom experiences and (b) the motivations provided to challenge the child to make use of his talents".[3]

The research reported in the present paper represents a further shift away from an interest in scholastic achievement per se to an investigation of other behavioral measures which might shed further light upon the differences between straight grade and interage instruction insofar as these differences reflect themselves in behavioral outcomes. More specifically, the following comparisons are made in the present report.

1. Differences in the attitudes of interage and straight grade pupils toward school.
2. Differences in initiative and responsibility of experimental and control subjects in the classroom setting.
3. Differences in the self concepts of interage pupils and students in the straight grade class.
4. Differences in interest expressed toward various subject matter areas.
5. Differences in creative thinking among children in the experimental and control conditions.
6. Differences in the bases for selecting classroom leaders in the various subject matter areas.

[3] Ibid., p. 23

SECTION II

THE RESEARCH STUDY

The Sample

The selection of subjects was essentially the same as that employed during the year 1961-62. Consequently, the selection procedures will not be repeated in detail. In brief, the second grade students were the same as those students in the previous year. These students, it will be recalled, were so assigned to interage and regular classes that the two groups were closely matched with respect to intelligence. Stanford Binet I.Q. scores were employed for this purpose. In addition, these students were specifically selected to represent the "brightest" students in the district. The success of the selection procedures is attested to by the mean I.Q. of both groups, which came to approximately 120.

The 1st grade sample employed during the present year were selected by their kindergarten teachers as the brightest in their respective classes. These children were, then, randomly assigned to the interage and traditional classes.

Research Instruments Employed

A. The Unfinished Sentence Test

This test was designed specifically to enlist information concerning each pupil's (1) attitudes toward school; (2) sense of responsibility and initiative; and (3) self-image. A total of 10 incomplete sentences were administered to each child with the instructions, "you are to finish each sentence so that it tells something about you".

Items eliciting attitudes toward school.

Item 9- When I enter school in the morning, I am very.....

Item 6- School is .....

Item 4- When I grow up, I want to become.....

Items revealing information concerning self-image.

Item 7- My teacher thinks I am.....

Item 5- Most children think I am.....

Items indicating sense of responsibility and initiative.

Item 1- Teacher has just been called out of class. It is now time to.....

Item 4- When the teacher left me in charge of the class, I.....

Item 10- When I don't understand something in class, I.....

B. The "I need help" test.

This instrument was specifically designed to determine: (1) the extent to which students tend to choose friends to help them with academic work and (2) the extent to which their selections are objectively based upon the capacities of the individuals selected rather than upon the mere fact that they are friends.

There were altogether five items in this test. The three critical items were:

Item a. I need help in arithmetic. The three pupils from whom I should seek help are.....

Item c. I need help in reading. The three pupils from whom I should seek help are.....

Item e. My three closest friends in class are.....

The teachers in each class were then asked to select the three children who they felt were most capable of providing help in arithmetic and, similarly, the three most capable of helping in reading. It was thus possible to compare the teacher selections with the pupil selections in the interage and regular classroom settings.

C. The "Uses Test".

This test was adopted from instruments employed by Getzels and Jackson to investigate creativity and intelligence.[4] Five common objects are listed (bricks, pencils, paper clips, toothpicks and a sheet of paper) and the pupil is asked to indicate the various uses to which these objects can be placed.

[4]Getzels and Jackson- Creativity and Intelligence, John Wiley, New York 1961.

According to Getzel and Jackson, the "Uses Test" provides a measure of creativity inasmuch as the child is required to find a diversity of different applications for these common objects.

D. The California Achievement Test

The California Achievement Test, Grades 1,2,3 and lower 4th, was administered in October 1962 and May 1963. On the first administration, Form AA was employed and Form CC on the second.

The California Achievement Test is subdivided into three scales: (1) Arithmetic, which is concerned with airthmetic reasoning and the fundamentals of arithmetic; (2) Reading, which measures vocabulary and the ability to comprehend written material; and (3) Language, which involves knowledge of spelling and the mechanics of English.

STATISTICAL ANALYSIS

The form of statistical analysis varies with the evaluative instrument employed. To simplify the exposition, each instrument is listed below along with the statistical analysis employed.

A. The Unfinished Sentence Test. The responses to each sentence were dichotomized into two categories with the label identifying the categories dependent upon the specific sentence involved. Thus, the responses to Item 6- School is.....- were dichotomized into two categories indicating favorable responses (fun, a happy place, nice) and unfavorable responses (nutty, junky, awful). A Chi Square Test, two sample case, was administered to determine whether or not there were significant differences in the frequency of replies on the two categories depending upon the Experimental Condition.

Occasionally, a student did not reply to a question, or, if he did, his response could not be classified into one of the two categories. In the latter event, the pupil's response was dropped from the analysis. For this reason, the N reported from item to item varies slightly. In any event, with one or two exceptions, the number dropped was so small as not to affect the conclusions drawn.

B. The "I need help" test.

In this test, it will be recalled, each pupil was asked to list the names of the three students from whom he would seek help in two academic areas - Arithmetic and Reading. Each pupil was also asked to list his three closest friends in class. The purpose of this test was to investigate the hypothesis that because of the greater opportunity for each pupil to learn the capabilities of peers in the interage setting, the children in the interage classes: (1) would be less likely to select friends to help them and (2) they would evidence a greater variety of selections because their choices would be based upon benefits to be derived rather than upon popularity considerations.

Two different scores were calculated for each child: (1) the number of times he selecte a friend to assist him and (2) the number of different selections made. The Student t-ratio for uncorrelated samples was employed to determine the significance of the difference between the means of each experimental group.

Finally, since the teacher was asked to select the names of students best qualified to provide assistance, it was possible to determine the extent of agreement between the student selections and those of the teacher. Chi Square analyses were performed to determine whether or not there were significant differences between the two experimental conditions in the frequency of agreement between student and teacher selections at each ordinal position (1st, 2nd and 3rd selections).

C. The "Uses Test".

In this test, the score for each child consisted of the total number of different uses listed by him for the five common objects named in the test. A student t-ratio for uncorrelated samples was then performed to determine whether or not the means of the experimental groups differed significantly from one another.

D. The California Achievement Test.

Since both grades 1 and 2 were included in the present study, separate 5 analyses were conducted comparing the means of the interage condition with the control group on the three scholastic measures - arithmetic, reading and language.

SECTION III
RESULTS

The Unfinished Sentence Test

It will be recalled that the Unfinished Sentence Test was devised for the purpose of shedding light upon three behavioral areas which possibly differentiate interage from traditional classroom instruction. These areas are as follows: (a) attitudes toward school; (b) self-concepts; and (c) sense of responsibility and initiative.

Attitudes Toward School

The three items presumed to elicit attitudes toward school are:

Item 6- School is.....

Item 9- When I enter school in the morning, I am very .....

Item 4- When I grow up, I want to become.....

The results of the analysis of these three items are shown in Tables 1, 2 and 3.

Percent Reporting

	Favorable Attitudes	Unfavorable Attitudes	N
Interage	97.5	2.5	40
Straight Grade	78	22	45

$X^2 = 6.07$

$P < .05$

Table 1- Analysis of Responses to Incomplete Sentence "School is....."

Table 1 reveals that, although the majority of students in both conditions reported favorable attitudes, an overwhelmingly large number of students in the interage condition so responded. The difference between the two conditions is significant as well beyond the .05 level.

A possible fault with the item reported in Table 1 is that it is too direct. Thus, the children may well perceive the purpose of the item and feel constrained to provide

conventional replies. The item reported in Table 2, on the other hand, largely overcomes this handicap since it encourages the child to report his feelings upon entering school, rather than, more directly, his attitude toward school per se. It can be seen that the percent of students responding "favorably" drops sharply in both conditions. Nevertheless, the percent of interage students reporting pleasant affect remains significantly in favor of the interage condition.

Percent Reporting

	Pleasant Affect	Unpleasant Affect	N
Interage	50	50	38
Straight Grade	32	68	34

$X^2 = 4.29$

$P < .05$

Table 2- Analysis of Responses to, "When I enter school in the morning, I am....."

The responses reported in Table 3 provide the least direct approach to attitudes toward school of all three items employed in the Incomplete Sentence Test. The responses to this item---When I grow up, I want to.....--were classified into two categories, teaching and non-teaching. It is assumed that the selection of the teaching profession reflects favorable attitudes toward classroom experiences. It can be seen that, once again, a strikingly larger proportion of interage children expresses favorable attitudes. The difference between the two conditions is significant at beyond the .01 level.

Percent Indication

	Teaching Profession	Non-teaching Profession	N
Interage	40	60	42
Straight Grade	15	85	46

$X^2 = 6.88$

$P < .01$

Table 3- Analysis of Responses to, "When I grow up, I want to be ....."

The Self-Concept

Two of the incomplete sentences were designed to elicit thematic material concerned with the pupil's perception of himself as a social being. Table 4 presents the results insofar as peer attitudes are concerned and Table 5 the pupils' perceptions of their teacher's attitudes toward them.

Percent Indicating

	Favorable Attitudes	Unfavorable Attitudes	N	
Interage	75	25	40	$X^2 < 1.00$
Straight Grade	83	17	46	$P < .05$

Table 4- Analysis of Responses to, "Most children think I am....."

Percent Indicating

	Favorable Attitudes	Unfavorable Attitudes	N	
Interage	95	5		$X^2 < 1.00$
Straight Grade	95	5		$P < .05$

Table 5- Analysis of Responses to, "My teacher thinks I am....."

Examination of Tables 4 and 5 reveal that the majority of pupils in both experimental groups felt that they were liked by their peers and teachers alike. The differences between the interage and straight grade classroom conditions, however, do not approach statistical significance. As revealed by their self-perceptions as social beings, it appears that the self-concepts of the children in both groups are generally favorable.

Responsibility and Initiative

It will be recalled that the three incomplete sentences are presumed to shed light upon the sense of responsibility and initiative among the pupils involved in the study were:

Item 1- Teacher has just been called out of class. It is now time to.....

Item 4- When the teacher left me in charge of the class, I.....

Item 10- When I don't understand something in class, I.....

The results of the analysis of item 1 are presented in Table 6. The responses to these items are trichotomized as follows: emphasis upon constructive activities (study, work0: emphasis upon deportment (be good, sit and wait); and emphasis upon non-constructive activities (shout, yell, have fun).

Percent of Responses

	Emphasis upon constructive activities	Emphasis upon Deportment	Non-constructive emphasis	N
Interage	70	14	16	36
Straight Grade	38	36	26	39

$X^2 = 7.66$

$P < .05$

Table 6- Analysis of responses to, "Teacher has just been called out of class. It is now time to....."

It can be seen that a substantial and statistically significant difference exists between the experimental groups in the replies to this item. The majority of children in the interage condition placed the stress upon constructive activities whereas most students in the straight grade class fell into one of the two categories on which the emphasis is non-constructive. When the second and third categories are collapsed into one--representing non-constructive activities as opposed to constructive activities--the differences are brought more sharply into focus (Table 7).

Percent of Responses

	Emphasis upon constructive activities	Emphasis upon deportment or non-constructive activities	
Interage	70	30	
Straight Grade	38	62	

$X^2 - 6.02$

$P < .01$

Table 7- Analysis of responses to, "Teacher has just been called out of class. It is now time to....." Responses classified into two categories.

Table 8 presents the results of the analysis of item 4. The responses to these items were dichotomized into the following categories: (1) take charge in class by giving positive directions and (2) non-constructive emphasis (maintaining discipline or keeping class occupied by having "snack time".). Although the percentage of students in the interage class who emphasized constructive activities is somewhat greater than in the control group, the difference does not approach statistical significance.

Percent of Responses

	Gave positive directions	Non-constructive emphasis (maintain discipline or have a snack time)	N	
Interage	33	67	33	$X^2 < 2.00$
Straight Grade	19	81	41	$P < .05$

Table 8- Analysis of responses to, "When the teacher left me in charge of the class, I.....".

To complete the analysis of items dealing with initiative and responsibility, Table 9 presents the results of the analysis of item 10. It can be seen that an extremely large difference exists between the two experimental groups in the responses to this item. Whereas 62 percent of the interage pupils indicated that they would seek help from other students, only 18 percent of the pupils in the straight grade classroom responded that they would seek further help. In addition, the responses of five students in the regular class could not be placed in one of the two categories since they reported their feelings rather than what they would do; e.g., I would feel sad; I would do it wrong; I could cry.

Percent of Responses

	Seek teacher help	Seek student help	
Interage	38	62	$X^2 = 16.11$
Straight Grade	82	18	$P < .01$

Table 9- Analysis of Responses to, "When I don't understand something in class, I .....".

Summarizing the analyses of the unfinished sentence test, we have seen that: (a) Students in the interage class have more favorable attitudes toward school. This conclusion is supported by all three items concerned with pupil attitudes. (b) The self-perceptions of the pupils in both experimental groups are generally favorable. The differences between conditions were non-significant on both items dealing with the self-concept. (c) On the three items dealing with responsibility and initiative, two significantly favored the interage condition. The third, item 10, was in the same direction, although not statistically significant. Interage children, when left in charge of the class, are more likely to initiate constructive activities. Also, when they fail to understand something, they will seek assistance from fellow students rather than from the teacher.

"I Need Help" Test

It will be recalled that this test required the pupil to list the names of students from whom he would seek help in either Arithmetic or Reading. Each pupil was also required to list his three closest friends. Thus, for each pupil it is possible to determine (a) the number of different individuals selected and (b) the number of times friends were selected. Finally, by comparing the pupil selections with those of the teachers, it was possible to determine the amount of agreement between the two. Presumably, the higher the agreement, the more informed is the student concerning the appropriate basis for selection.

Table 10 summarizes the analysis of the first two measures--number of different individuals named and number of friends named. It can be seen that, although the number of different individuals named was greater in the interage group, the difference in means is small and not statistically significant. However, when the two groups are compared in terms of the number of friends named, the interage children selected significantly fewer. Thus, it appears that the interage children are more selective in choosing fellow students to help them with Reading and Arithmetic.

	Interage	Straight Grade	N	t	p value
Number of different individuals named	4.60	4.33	40	1.29	$p > .05$
Number of friends named	2.58	2.02	46	2.36	$p < .05$

Table 10- Means, t's and p values comparing interage with straight grade class on (1) number of different individuals named and (2) number of friends named.

A question which naturally arises is, "Granted that the interage children are more selective in choosing peers to help them in Arithmetic and Reading, are their selections any better than pupils in the regular classes? In other words, do interage children tend to select pupils who are better qualified to render assistance"?

Table 11 presents the summary analysis of the extent of agreement, at each ordinal position, between the pupils' selections and those made by the teacher. Assuming that the teacher selections represent the best possible choice, then, the higher the percent of agreement the better the pupil selection is judged to be. The test of significance in each case is a Chi Square Analysis at each ordinal position. It can be seen that, of a total of 6 comparisons, five favor the interage group. Of these 5, two are significant at beyond the .05 level. Thus, it appears that, in general, the interage children make more adequate judgments in selecting peers to render them assistance in Reading and Arithmetic.

Percent Agreeing

	Ordinal Position	Interage	Straight grade	Difference	
Arithmetic	1	54	24	+30	$p < .05$
	2	27	19	+ 8	
	3	44	24	*20	
Reading	1	54	46	+ 8	
	2	37	13	+24	$p < .05$
	3	32	35	- 3	

Table 11- Percent of children in both experimental conditions agreeing with teacher selections in Arithmetic and Reading at three ordinal positions.

The Uses Test

It will be recalled that Getzels and Jackson employed the "Uses" test as one measure of creative thinking. Presumably, individuals who can conceive of a wide variety of uses for common objects are better creative thinkers than those who can conceive of only a few. On the grounds that the Interage classroom setting provides a greater opportunity for creative expression than the conventional classroom, it might be expected that interage children would also evidence greater creative thinking, as judged by the uses test.

That such is not the case is indicated in Table 12. It is readily apparent that the means for both groups are extremely close. The student t-ratio of .61 does not even approach statistical significance.

	X	N	s	
Interage	5.61	32	6.1	t = .61
Straight Grade	6.42	48	5.4	p .05

Table 12- Means and student t-ratio comparing Interage pupils with those in Straight Grade classes in the "Uses" test.

In the absence of additional information, then, it does not appear that the greater opportunity for creative expression leads to improved performance on the measure of creative thinking employed in the study. More will be said about this issue in Section IV of the report.

The California Achievement Test

It will be recalled that Form AA of the California Achievement Test was administered to all pupils in October 1962 and Form CC in May 1963. The results of the first and second grade students are reported separately in the following paragraphs.

1st Grade Students

The results of the October testing indicated that the two experimental groups were initially quite comparable on all three scales of the California Achievement Test. In no case did the differences in group means approach statistical significance.

Table 13 presents the means, t-ratios, and p values comparing the experimental groups on all three scales of the California Achievement Test administered at the end of the year. The results are in marked agreement with those reported in the 1962 study. The interage condition produced superior scores on all three scales of the achievement test. In fact, on two of these scales, the mean difference in achievement size was greater than one year. The differences in all comparisons are significant at beyond the .01 level.

	Mean Achievement			
	Interage	Straight grade	t-ratio	p value
Arithmetic	3.72	2.53	4.76	$p < .01$
Reading	3.70	2.67	3.13	$p < .01$
Language	3.84	2.91	4.43	$p < .01$

Table 13- Group means in achievement age, student t-ratios and p values comparing two experimental groups on three scales of the California Achievement test (1st grade).

2nd Grade Students

Table 14 presents the group means, t-ratios, and p values comparing the experimental conditions on all three scales of the California Achievement Tests. It can be seen that, unlike the 1st grade comparisons, the means of the two groups do not diverge nearly so much. Indeed, in only one of the comparisons is the difference statistically significant. This comparison involves the Arithmetic scale of the California Test. It will be recalled that, in the comparisons of these same two groups when the pupils were first graders, the interage condition was significantly superior on two scales of the Metropolitan Achievement Battery, viz., Arithmetic and Word Discrimination. More will be said in Section IV about this apparent failure to sustain the first years gain achieved by the interage group.

Mean Achievement

	Interage	Straight Grade	t-ratio	p value
Arithmetic	5.13	4.74	2.79	$p < .01$
Reading	4.86	5.01	1.00	$p > .05$
Language	4.88	4.68	.91	$p > .05$

Table 14- Group Means in achievement age, student t-ratios and p values comparing two experimental groups on three scales of the California Achievement Test (2nd grade).

SECTION IV

CONCLUSIONS AND DISCUSSIONS

As indicated in the introduction, the Plainedge interage project took on a different emphasis during the school year 1962-63. Instead of being oriented primarily toward assessing achievement differences among children in interage and straight grade classes, the emphasis shifted to a study of a variety of other behavioral outcomes. Thus, among the behavioral outcomes studied this year, we investigated: (1) attitudes toward school; (2) sense of initiative and responsibility; (3) self-concepts; (4) creative thinking; (5) the bases for selecting classroom leaders in various subject matter areas.

Our findings were as follows:

1. The attitudes of interage children toward schools are more favorable than the attitudes of children in the straight grade class. This conclusion is supported by the replies of the children to three incomplete sentences representing three degrees of indirectness for assessing attitudes. If confirmed in future studies involving greater N and a greater number of degrees of freedom on the teacher variable, this conclusion may be of far reaching significance. It seems indisputable that the more favorable the attitude of the learner toward the learning situation, the greater are the learning gains. These learning gains should not be restricted to the formal skills and knowledges which we frequently identify as the school's major mission but should extend into other areas such as responsible citizenship.

2. Judging from the replies on two of the three incomplete sentences dealing with responsibility and initiative, it was found that the interage pupils are more likely to initiate positive learning experiences in the absence of teacher in the classroom, and are more likely to solicit student help when problems arise involving their own understanding. In a sense, then, the hypothesis raised in paragraph 1 above appears to

have received partial confirmation. It would seem that one aspect of good citizenship, at least, would require that responsible citizens carry out positive, directed activities in the absence of authority rather than merely emphasizing the need to be "good".

3. Pupils in both experimental conditions appeared to enjoy favorable self-concepts. There was no indication that the interage children were in any way differentiated from the straight grade pupils in this variable.

4. There was no indication of the differentiation of straight grade and interage children on the "Uses" test which is presumed to measure "creative" thinking ability. The failure to find any difference between the two groups in "creativity" does not surprise the research director for a variety of reasons: (a) the concept of creativity is still only rather hazily formulated in the minds of many researchers. Many individuals identify creativity with the fine arts-music, sculpture, graphic art, etc. A person not intimately involved in one of these spheres is, ipso facto, not a creative person. On the other hand, many researchers refuse, quite justifiably in our opinion, to equate creativity with the fine arts but rather these researchers seek to identify it as a thinking process. Thus, eminent researchers like Guilford suggest that divergent thinking (seeing relationships in unusual ways) comes much closer to defining creative thinking than mere involvement in the fine arts. Such a way of regarding creative thinking has the advantage of including outstanding thinkers independent of their fields of interest. It would thus include the divergent thinker in the sciences (Pasteur, Lister, Koch, etc.) as well as in the arts.

The "Uses" test is based upon Guilford's conceptualization of creativity. Thus, it is presumed that the divergent thinker will find many more uses for common objects than the more conventional "convergent" thinker. The failure to find difference between the Interage and Straight Grade classes in the Uses test may reflect one or several of many possibilities. To name but a few:

a. Creative thinking, when defined as divergent thinking, is not acquirable nor

readily modifiable. Like intelligence, divergent thinking may be something which is largely genetically determined and which is, therefore, subject to only minor modification by experience.

b. The "Uses" test may not be appropriate for the age level employed in the study. The children, largely 6 and 7 year olds, may have been handicapped by a vocabulary which is inadequate to "label" some of the uses which were conceptualized.

c. Assuming that tendencies toward divergent thinking is modifiable, the Interage condition may not provide the types of learning experiences which differentiate interage children from those in the straight grade class. In other words, both settings may, in the final analysis, stress convergent thinking processes.

The answer to the questions raised above will come only from extensive, well-controlled research specifically aimed at "tying down" this important variable.

5. Finally, on the "I need help" test, the interage children evidenced a significantly lower tendency than children in the straight grade class to seek friends when tutorial help is needed. Their selections, are, in fact, more in line with the teachers' evaluations of the pupils qualified to render assistance. It is, therefore, concluded that the interage setting provides a basis which permits the interage pupil to make better informed selections of peers to render tutorial services. The reasons for this difference may be manifold: (a) greater opportunities for pupils to observe each other's proficiencies in the interage class; (b) less embarrassment about seeking help in the interage condition; or (c) less emphasis in the interage class upon grouping along "friendship" lines.

On the achievement tests, it was found that the results for the 1st grade confirmed the conclusions of the prior year. Indeed, if anything, the difference in achievement between the interage and the straight grade classes was greater during the present year. The interage 1st grade pupils performed better than their controls on all three scales of the California Achievement Test. All differences were significant at beyond the .01 level. Indeed, the difference in achievement age was near to or greater than one year on each scale.

The achievement test results for the second grade children were not nearly so favorable toward the interage condition. The interage pupils were significantly superior to their straight grade controls on only one scale - Arithmetic. Since the second grade children involved in these comparisons were the same ones who, as first graders, performed significantly better on two scales of the Metropolitan Achievement Battery, it is appropriate to raise the question, "why were the gains not sustained"? Several possibilities suggest themselves. Needless to say, these possibilities should be carefully checked out in subsequent research. It is clearly most important to determine whether or not the achievement gains of interage instruction is short term.

1. Interage instruction may have its greatest impact during the first year of school. Since the interage class is less restrictive, more productive of favorable attitudes, and probably represents greater emotional continuity with kindergarten procedures, it is possible that an effective adjustment is more rapidly achieved in the interage class. This may in turn provide a more favorable learning environment for 1st grade pupils. It is possible that, by the time second grade instruction has begun, the majority of children in the straight grade class have made a satisfactory adjustment. Thus, the initial instructional advantages of the interage setting may well dissipate by the second year. Even if this possibility should be confirmed by future research, however, it should not be concluded that the interage setting has no advantages over the straight grade class. We have already seen that, apparently, the interage class provides other gains which are not, strictly speaking, scholastic in nature.

2. Since the children in the second grade class had been chosen specifically on the basis of demonstrated intellectual ability, it is conceivable that the "ceiling" of the California Test had been achieved by many pupils, leaving little room for differentiating between the experimental condition. This possibility must receive serious consideration. The age level of the California test employed in this study extends only through the

lower fourth grade. However, most of the children in both conditions were performing well into the upper 4th grade level. Indeed, many extended well into the fifth grade. In future years, then, the achievement battery selected for the study should be one which extends well beyond the grade level of the pupils involved in the study. In this way, then, the possibility of failing to discriminate between the experimental groups because of the ceiling effect could be ruled out.

APPENDIX B

I. TESTS — Page

A. Unfinished Sentence Test — 3,7

1. Attitudes Toward School 7

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D. California Achievement Test 16, 20, 21

1. First Grade Students

2. Second Grade Students

"Unfinished Sentence Test"

Name_____ Age_____

Teacher_____ Date_____

This is a test to find out how fast you can complete unfinished sentences. In the 10 questions below, there are 10 unfinished sentences. You are to finish each sentence so that it tells something about you. There are no right or wrong answers. However, each answer should tell us something about you.

Don't worry about spelling but write as clearly as you can.

DO NOT SKIP ANY SENTENCES

COMPLETE THE SENTENCES.

1. My teacher has just been called out of the class. It is now time to_____
_____

2. Johnny is helping me with my reading. I shall do everything to _____
_____

3. When I grow up, I want to become_____
_____

4. When the teacher left me in charge of the class, I_____
_____

5. Most other children think I am_____
_____

6. School is _____
_____

7. My teacher thinks I am_____
_____

8. My favorite subject is_____
_____

9. When I enter school in the morning, I am very _____
_____

10. When I don't understand something in class, I_____
_____

To the teacher: The teacher should read the directions to the class. Then each question should be read in turn, permitting the children sufficient time to complete the question. It is perfectly permissible for the teacher to help each child in any way short of suggesting answers. Thus, if a given child can provide the answers orally, but not in writing form, the teacher may write in the answers for the child. However, care should be taken not to alter the child's response in any way.

Thank you for your cooperation.

Name_____ Age_____

Teacher_____ Date_____

This is a test to find out how you feel about other children in your class. In answering each question, you should imagine that you are in the situation described in the question. There are no right or wrong answers. You should write down the names of the children whom you feel best answer each question.

DO NOT SKIP ANY QUESTIONS.

a. I need help in arithmetic. The three pupils from whom I should seek help are:

1._____
2._____
3._____

b. I am planning a birthday party. The three pupils whom I should most like to invite are:

1._____
2._____
3._____

c. I need help in reading. The three pupils from whom I should seek help are:

1._____
2._____
3._____

d. I want three pupils to play on my baseball team. Their names are:

1._____
2._____
3._____

e. My three closest friends in class are:

1._____
2._____
3._____

To the teacher: The teacher should read the directions to the class. Then each question should be read in turn, permitting the children sufficient time to complete the question. It is perfectly permissible for the teacher to help each child in any way short of suggesting answers. Thus, if a given child can provide the answers orally but not in written form, the teacher may write the answers for the child. However, care should be taken not to alter the child's response in any way. Thank you for your cooperation.

The "Uses" Test

Name_____ Age_____

Teacher_____ Date_____

We have listed five objects below. Each object may be used to do many things. We want you to write down all of the uses you can for each object. We have given you several examples in each case.

Don't worry about spelling. Write down anything that comes to your mind, no matter how strange it may seem.

1. BRICKS build houses, doorstop_____
_____

2. PENCILS write, bookmark_____
_____

3. PAPER CLIPS clip paper together, make a necklace _____
_____

4. TOOTHPICKS clean teeth, test cake_____
_____

5. SHEET OF PAPER write on, make an airplane_____
_____

To the teacher: The teacher should read the directions to the class. Then each question should be read in turn, permitting the children sufficient time to complete the question. It is perfectly permissible for the teacher to help each child in any way short of suggesting answers. Thus , if a given child can provide the answers orally but not in writing form, the teacher may write the answers for the child. However, care should be taken not to alter the child's response in any way.

Thank you for your cooperation.

*Adopted from Getzels and Jackson, "Creativity and Intelligence." John Wiley and Sons.